

ROUTING SLIP

DIVISION OF WILDLIFE REFUGES

DATE: 2-12 19 41☒ MR. SALYER☒ SECTION OF HABITAT IMPROVEMENT:☒ ~~MRS. WOODEN~~~~Mr. Kibicki~~☒ ~~MR. ELMER~~~~Mr. Smith~~ PND~~MRS. GARVIN~~~~Mr. Griffith~~ PEG☒ ~~MR. DUMONT~~~~Miss Cook~~ JWC

SECTION OF OPERATIONS:

SECTION OF ERA:

~~Mr. Ball~~~~Mr. Regan~~ JGR☒ ~~Mr. Kaurmes~~ WK☒ ~~Dr. Rouen~~ WSB

Mrs. Watkins

Mrs. Fishman

Mrs. Kricun

☒ SECTION OF LAND MANAGEMENT:

STENOGRAPHERS:

~~Mr. Barnshaw~~

Miss Price

~~Mr. Ackerman~~ COA☒ ~~Miss Whorley~~ V.W.☒ SECTION OF STRUCTURES:~~Mr. Taylor~~ WV~~Mr. Gustafson~~ RR

REMARKS:

North Delta Easement # 2QuarterlyNovember 40 - January 41Return to: Cook

NARRATIVE REPORT
MIGRATORY WATERFOWL EASEMENT REFUGES
DISTRICT #2 NORTH DAKOTA

3
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By: Nelius B. Nelson, Laborer-Patrolman
Lake Ardoch Refuge, Ardoch, N. Dak.

TRANSMITTED BY REGIONAL OFFICE

2-10-41

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(PND)

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NARRATIVE REPORT

I. General

A. Weather Conditions: Lake Ardoch Refuge

Rainfall

November42
December50
January00
Total92

In addition to the rainfall shown above $2\frac{1}{4}$ inches of snow fell during December and $10\frac{1}{2}$ inches during January. The last three days of January the temperatures were above freezing; this crusted the snow enough to stop the drifting.

B. Water Conditions: Lake Ardoch froze over on November 11th when the water level was about 18 inches below spillway elevation. The ice was from three to four inches thick and did not thaw out later. However, the water about the gates stayed open and before the last week in November all the water under the ice drained out. The ice that remained would naturally be fresh. The Lake Ardoch springs began flowing quite fast during the last week in December; the water from the springs covered about eighty acres before they returned to their normal flow. Last winter the springs did not flow fast until the middle part of March. A sample of Lake Ardoch was secured on November 13th and sent in for analyses.

The water at Kellys Slough continued running over the spillway until the first part of January.

Little Goose, Pioneer Lake and Wood Lake Marsh Refuges

were near spillway elevation when the water froze while Silver Lake, Lac Aux Mortes, Buffalo Lake, Johnson Lake, Sibley Lake, Prairie Lake, Lambs Lake, Billings Lake, Rose Lake and Pleasant Lake were either dry or nearly dry when freezing weather set in.

II. Wildlife

A. Waterbirds:

1. Population and behavior

- a. Species. Lesser Yellow-legs - during the first week in November 35 of these birds were still feeding along the Lake Ardoch dam. At that time the temperatures were around the freezing point.

Mallards - five Mallards were seen at the Kellys Slough Refuge about an open spring during the latter part of December.

- b. Groups. During the second week of December before the snow storm there were about five hundred ducks of which about 80% were mallards and 2% Lesser Scaups on Lake Ardoch. Thousands of ducks and geese flew over the Lake Ardoch vicinity on November 11th during the storm. As a result of the storm, only, about 15% of the usual Northern flight of ducks and geese stopped in this district while on their way South.

2. Food and cover. The *P. vaginatus* beds on Lake Ardoch and Kellys Slough did not move very much before the water froze. This would indicate that the plants continued to grow until about the second week in November. Just a few seeds could be found in a fork full of *P. vaginatus* during the first week in November.

The *P. vaginatus* planted about Lake Ardoch during the

The *S. acutus* planted about Lake Ardoch during the early fall had sent up numerous shoots before the lake froze. If a fourth of this lake could be planted into *S. acutus* and *S. paludosus* more species of waterfowl would nest on the refuge it is believed.

The Pioneer Lake and Wood Lake Marsh refuges have sufficient food for waterfowl. Pioneer Lake lacks some cover but because of pasturing of livestock about part of the creek additional cover planting would not be of much value.

3. Disease. No dead or sick birds were seen on any of the refuges.

B. Upland-game birds

1. Population and behavior. Hungarian Partridges are the most common on the refuges in this district; grouse are second - the pinnated being more common. Due to the amount of snow on the level in this district upland-game birds are finding it difficult to obtain enough food and gravel. Several sportsmen's clubs have constructed shelters and feeders. Some farmers have opened strawpiles in which the birds may scratch for grain. The upland-game feeders on the Lake Ardoch Refuge are being used by partridges and a few pheasants.

2. There was no upland-game stocking on any of the refuges in this district.

- C. Big-game animals. Two deer have occasionally been seen on the Lake Ardoch Refuge. It is believed a few deer are staying on the Johnson Lake Refuge.

- D. Fur-bearing animals, Predators, Rodents and other animals.

1. Population and behavior. A few muskrats from the north end of Lake Ardoch moved down to the dam near the control gates and one burrow was dug. The muskrats were either killed by the mink that lives near the control gates or moved when the water was let out of the lake.

The mink on the government owned land on Kellys Slough are most numerous about the open springs. It is believed that some of the local trappers trapping by the government owned land will remove some of the mink on the government owned land since mink travel considerably.

The red foxes on the Lake Ardoch Refuge are living chiefly on rabbits; one rabbit was killed near headquarters. A half an hour chase by a fox in pursuit of a rabbit ended when the rabbit ran up in a farmer's yard; several times the fox was within a few feet of the rabbit.

2. Control. Four minks have been taken by local trappers on the Lake Ardoch Refuge on easement land.

Several land owners on some of the other easement refuges were issued trapping permits to remove skunks, weasels, mink and foxes.

- E. Fish. None, except for a few minnows and sticklebacks on Lake Ardoch, Kellys Slough, Little Goose and Pioneer Lake.

III. Refuge Development and Maintenance.

A. Physical Development.

1. Lake Ardoch Refuge. The WPA crew constructed about 9,196 feet of fence on the government owned land on the west side of the lake to prevent livestock from

grazing. This was a four barbed wire fence with oak and ash posts. The fence posts were received from the Sullys Hill Game Preserve and salvaged barbed wire was used. All the old posts and wire on this land was removed. The leak in the south wing-wall at the control gates was repaired; all the rocks and dirt was first removed back of the wall; the wall was slowly heated to remove any frost present; about 6 cubic feet of concrete was poured in after the wall had been thoroughly cleaned; the hole was refilled with clay and carefully packed in. The muskrats burrow at the dam was dug up and refilled with clay.

All the wooden white refuge signs were removed from the other easement refuges in this district and hauled to Lake Ardoch. The paint on the faces of the signs have been removed; a few signs were repainted.

The construction of the gopher poison boxes were started by the Laborer-Patrolman and the NYA boys. One upland game shelter and several feeders were put up. Most of the ice about the control gates was removed so that the gates can be operated without any difficulty when the lake refills in the spring.

2. Other easement refuges. All the wooden white signs were removed and hauled to Lake Ardoch for refinishing.

B. Plantings.

1. Aquatic and Marsh Plants. No planting done during this quarter.
2. No cultivated crops on government-owned land.

3. Trees and shrubs. No change.

4. Grasses. No change.

C. Collections.

1. Plant Material. None collected this quarter.

2. Specimens. None

D. Distribution of Seed and Nursey Stock.

1. 10 pounds of *S. acutus* and 63 pounds of *S. validus* seed is available for distribution.

IV. Public Relations.

A. Recreational Uses.

1. No public recreational areas.

2. Fishing. None

3. Hunting. The main Northern flight of ducks and geese did not take place until the second week in November during the severe snow storm. Very few birds stopped in this district and as a result hunting was not very good. Local hunters have stated that the past waterfowl hunting season was one of the poorest for some time. This was due to the unusually mild weather during October and the first part of November and the sudden change to a severe snow storm with strong winds and zero temperatures.

On several easement refuges farmers were issued trapping permits so that either themselves or their sons could trap some of the fur-bearing animals.

4. Number of visitors (officials and general public)

a. The Sullys Hill Refuge Manager (Mr. Wesley D. Parker) visited the Lake Ardoch Refuge on November 9th and 10th, December 21st, and January 19th and 20th. Mr. Parker

inspected several of the other refuges in this district, also.

Two representatives from the Pittman-Robertson set-up under the North Dakota State Game & Fish Department visited the Lake Ardoch Refuge regarding the stocking of pheasants on the refuge.

Mr. Earl McKay of Minto, N. Dak. (Junior Game Wardens' guide) visited the Lake Ardoch Patrolman to get some information on how to construct upland game shelters and feeders.

- b. About 45 persons visited the Lake Ardoch Refuge during this quarter. The observation tower was used by many of the visitors.

B. Violations.

1. Old cases.

- a. Harry Hewitt, Minto, North Dakota - apprehended while carrying gun on the refuge; no prosecution since it was his first offense and violation was not intentional.
- b. Ernest N. Enerson, Grand Forks, N. Dak. - no license in possession when apprehended but produced license at his home; no prosecution.
- c. Norbert Auer, Jr. Hillsboro, N. Dak. - hunting ducks at 5:15 P.M. ; case dropped because ~~the~~ youth was only 15 years of age.
- d. Rollo Cassady, Hillsboro, N. Dak. hunting ducks at 5:15 P.M. and did not have a hunting license in possession; case dropped because youth was 15 years old.

- e. Arnold Thompson, Grand Forks, N. Dak.- hunting ducks with a shotgun that had a capacity of more than three shells, youth only 15 years old - case dropped.

2. New cases, or violations.

- a. Four traps were picked up on government-owned land Kellys Slough on January 13th. A dead pheasant was being used for bait. Due to the amount of snow it has been impossible to get around at Kellys Slough to see the suspected owner of the traps. Local district game warden was informed of the pheasant being used for bait.

V. Economic Uses of Refuges: None.

VI. Field Investigation or Applied Research.

- A. Research Work. The Patrolman has been gathering and checking data on whether or not *S. acutus* will be suitable for planting widely on Lake Ardoch. A study is also being made on how the Lake Ardoch Refuge can raise more waterfowl than what it has during the past years, since it was made a refuge.

B. Bird Banding. None.

VII. Other items.

- A. Photographs.

Approved by:

Wesley D. Parker
Refuge Manager

Signed : Nelms B. Nelson

Title : Laborer-Patrolman



Lake Ardoch Refuge, January 21st, 1941; shows temporary upland game shelter and feeders.



Lake Ardoch Refuge, January 30th, 1941; gopher poison box with tray made by NYA boys. Top of box covered with roofing paper and tray bottom is , also, made of roofing paper. They are to be used in controlling gophers on dams.



Lake Ardoch water-control gates; January 27, 1941; in corner, below boards leak in wing-wall was repaired.



Lake Ardoch Refuge, January 30th, 1941; shows amount of snow about the buildings and location of flagpole that was erected by the WPA.

ROUTING SLIP

DIVISION OF WILDLIFE REFUGES

DATE: 11-16 1940☒ MR. SALYER☒ ~~MRS. WOODEN~~☒ ~~MR. ELMER~~☐ MRS. GARVIN☒ ~~MR. DUMONT~~

SECTION OF HABITAT IMPROVEMENT:

☒ ~~Mr. Kubiehek~~☒ ~~Mr. Smith~~☒ ~~Mr. Griffith~~☒ ~~Miss Cook~~

SECTION OF OPERATIONS:

☒ ~~Mr. Ball~~☒ ~~Mr. Krummes~~☐ Mrs. Watkins☐ Mrs. Kricun

SECTION OF ERA:

☒ ~~Mr. Regan~~☒ ~~Dr. Bourn~~☐ Mrs. Fishman☒ SECTION OF LAND MANAGEMENT:☒ ~~Mr. Edwards~~☒ ~~Mr. Ackerly~~☒ STENOGRAPHERS:☐ Miss Price☒ ~~Miss Whorley~~☒ SECTION OF STRUCTURES:☒ ~~Mr. Taylor~~☒ ~~Mr. Gannon~~

REMARKS:

7. Dakota CasementsDistrict # 2August - October 1940Return to: Cook

NARRATIVE REPORT
MIGRATORY WATERFOWL EASEMENT REFUGES
DISTRICT #2 NORTH DAKOTA

By: Nelius B. Nelson, Laborer-Patrolman
Lake Ardoch Refuge, Ardoch, N. Dak.

TRANSMITTED BY REGIONAL OFFICE
11-14-40

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W.W.

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NARRATIVE REPORT

I. General

A. Weather Conditions: Lake Ardoch Refuge

Rainfall

August	2.45
September	1.50
October	1.95
Total	<u>5.90</u>

Temperatures during October were above normal; the lowest was 28 degrees above. Flowers were still blooming by the Lake Ardoch cabin the last day of the period.

- B. Water Conditions: Water samples of Lake Ardoch were taken on September 2nd and October 19th. These will not be sent in to be analyzed until sometime in November. There has been no disagreeable odor from the lake this summer and farmers living around the lake and along the drainage creek have stated that their livestock have been drinking the water all summer and fall. On October the 17th, the Patrolman began lowering the water level; by the 31st of October the lake was down to 15 3/4 inches below spillway level. The water will be held at about this level until freezing weather sets in.

The Kellys Slough, Little Goose, Pioneer Lake and Wood Lake Marsh Refuges were near spillway elevation most of period while Silver Lake, Lac Aux Mortes, Buffalo Lake, Johnson Lake, Sibley Lake, Prairie Lake, Lambs Lake, Billings Lake and Pleasant Lake were either dry or nearly dry. At the north end of Johnson Lake there are several springs which maintain two small ponds. The same condition is at the north

end of Buffalo Lake. Rose Lake went dry during the last part of August.

II. Wildlife

A. Waterbirds:

1. Population and behavior

a. Species. Canvas-back - during September 110 were seen on Lake Ardoch. According to NYA youths working on this refuge, the Canvas-backs were not as numerous during the same period in 1939.

Whistling Swan - the patrolman saw two swans by the island at the north end of Lake Ardoch during August and September. A farmer near the north end of the lake stated that several times he has seen young cygnets with the swans. The patrolman walked over the islands which are densely covered with cord grass but was unable to find any young swans.

Redhead - during September there were about 225 on Lake Ardoch which is also an increase over 1939.

Franklin Gulls - between twenty and twenty-five thousand were on Lake Ardoch during September. The first flocks began coming in during the middle of August. They left during the first week of the hunting season.

Pelicans - thirty-four were seen during September for a few days on Lake Ardoch.

b. Groups. During September there were about 2000 ducks on Lake Ardoch of which about 25% were Blue-winged Teals. Most of the teals left before hunting season opened. During the middle of October, Pioneer Lake had about

900 ducks and Little Goose had about 400 ducks. Mallards, Pintails, Gadwalls and Shovellers made up most of the flocks. Gadwalls are becoming quite numerous.

2. Food and cover. On Lake Ardoch the beds of Potamogeton vaginatus were quite general over the lake; high waves on windy days did not seem to effect it any as very few of the plants have drifted ashore which would indicate that its stems and roots are stronger than those of P. pectinatus. The P. vaginatus fruited quite well. Teals, Gadwalls, Pintails, and shovellers were seen most frequently feeding in these beds. A few crustaceans were seen in the Forest River ^h where it enters the Lake Ardoch Refuge but none were found in the lake. Reptiles are rare on Lake Ardoch; a few frogs, lizards and painted turtles have been seen but mostly along the Forest River.

There was good field feeding for ducks and geese in the Lake Ardoch, Pioneer Lake, Little Goose and Kellys Slough vicinities since many crops were not cut due to hail and drouth.

The lake bottom of Rose Lake had nearly a solid stand of Scirpus paludosus. The lake dried up during August.

3. Disease. No dead or sick birds were seen on any of the refuges.

B. Upland-game birds.

1. Population and behavior. Upland-game birds are best represented at Sibley Lake which at the close of the season still had about 80 pheasants, 150 grouse (mostly pinnated),

and 130 Hungarian Partridges. Johnson Lake Refuge, also, has a good stock. The lake bottoms of these two lakes are densely covered with cord grasses, *Phragmites communis*, ragweeds and other short grasses. The Lac Aux Mortes Refuge has the largest number of pheasants (about 300) .

2. There was no Upland game stocking on any of the refuges in this district.

C. Big-game animals. None.

D. Fur-bearing animals, Predators, Rodents and other animals.

1. Population and behavior. On the Kellys Slough Refuge there appears to be between 15 and 25 mink on government-owned land which no doubt live on waterfowl when available. Steps are being taken to have most of these removed. There appears to be fewer muskrats on Kellys Slough this fall; this may be due to the large number minks.

There are two or three dozen muskrats on Pioneer Lake along the creek but there is no indication of any damage being done to the dam. Between six and ten mink are on Pioneer Lake Refuge and it appears that they are killing some ducks. By one mink hole there was a pile of mink dung made up largely of feather tips.

On all the easement refuges skunks, weasels and on some red foxes are quite numerous.

2. Control. No predatory animals were taken off the refuges during this period. However, many land owners on the refuges were contacted regarding the trapping of skunks, weasels, mink and foxes. Many of them expect to do some trapping this coming winter.

E. Fish. The five-spined sticklebacks were very numerous below the control gates on Lake Ardoch during October. No game fish were seen on any of the easement refuges in this district.

III. Refuge Development and Maintenance.

A. Physical Development.

1. Lake Ardoch Refuge. The WPA crew hauled with two bureau trucks 12 loads (2 to 3 ton) of rocks for riprapping on the dam. The riprapping on the south side of the control gates was completed and gravel was filled in between most of the rocks. There has been no indication of any washing on the south side of the control gates since the dam was riprapped. All the Lake Ardoch buildings were given a second coat of paint; flag pole was erected and painted; walk to boathouse was treated with linseed oil and hand rail painted; rocks were placed between the lawn and parking area and painted white.
2. Johnson Lake. All buildings were given two coats of paint; the posting signs were repaired and where necessary rocks and earth were piled about each sign post.
3. Lac Aux Mortes. Buildings were given two coats of linseed oil. The window and door frames were trimmed green. All posting signs were repaired and where necessary rocks and earth were piled about the sign posts.
4. Buffalo Lake. The buildings were given two coats of linseed oil and window and door frames trimmed. All signs were repaired.
5. On the following refuges the posting signs were also repaired: Silver Lake, Pleasant Lake, Pioneer Lake, Little Goose,

Prairie Lake, Lambs Lake, Rose Lake, Sibley Lake, Wood Lake Marsh and Minnewastena Refuge.

WVC
B. Plantings.

1. Aquatic and Marsh Plants.

a. Lake Ardoch. 5250 root clumps of *S. acutus*. These were planted on the shore of the long island on the west side of the lake, along the shores on both sides of the boat-house and at the south end of the dam.

2. No cultivated crops on government-owned land on refuges in this district.

3. Trees and shrubs.

a. Lake Ardoch. Ninety-five percent of the trees planted last spring about the cabin grounds are growing.

b. Buffalo Lake. The trees that were planted by the WPA in 1938 just east of the cabin are growing better than expected. The patrolman cleaned the weeds out of part of them this summer. It was impossible to get an NYA youth assigned to keep the weeds out of this tree lot.

4. Grasses.

a. Lake Ardoch. The lawn about the cabin was planted with grass seed but dry weather and no facilities for watering caused nearly all of the grass to die.

C. Collections.

1. Plant Material. The following seed was collected near Lake Ardoch by the WPA crew and NYA boys:

a. *S. acutus* with hulls 109 lbs. ✓
b. *S. validus* seed with hulls 44 lbs. ✓

This seed will be cleaned before distribution.

2. Specimens. No bird or animal skins collected.

D. Distribution of Seed and Nursey Stock.

1. The *S. acutus* and *S. validus* seed will be available for distribution as soon as it has been cleaned.

IV. Public Relations.

A. Recreational Uses.

1. There are no public picnic grounds on any of the refuges in this district. About eighty people had picnics in the timber along the entrance road to the Lake Ardoch cabin. Several people used boats on Lake Ardoch this period.
2. No fishing on any of the refuges.
3. Hunting. During the first week of the hunting season most of the hunters that were in the Lake Ardoch and Kellys Slough vicinity got a fair bag of ducks. The first week there were about a hundred geese on Lake Ardoch; this flock diminished to fifty-five the last week in October. During the month of October duck and goose hunting was not very good since very few Northern birds came in. This was due to the unusually mild weather.
4. Number of visitors (officials and general public)
 - a. Mr. Daniel H. Janzen and Mr. F. C. Gillett visited the Lake Ardoch Refuge and several of the other easement refuges in this district. The Sullys Hill Refuge Manager visited the Lake Ardoch Refuge several times besides inspecting several of the other refuges.
 - b. About four hundred people visited the Lake Ardoch Refuge during this period. The observation tower was used by many of the visitors.

B. Violations.

1. Mr. Harry Hewitt, Minto, N. Dak. apprehended while carrying gun on the Lake Ardoch Refuge.
2. Mr. Ernest N. Enerson, Grand Forks, N. Dak. , no license in possession when apprehended but produced license at his home.
3. Norbert Auer, Jr. Hillsboro, N. Dak. , hunting ducks at 5:15 P.M. near the Rose Lake Refuge.
4. Rollo Cassady, Hillsboro, N. Dak., hunting ducks at 5:15 P.M. and did not have a license in possession when apprehended.
5. Arnold Thompson, Grand Forks, N. Dak., hunting ducks with a shotgun which had a capacity of more than three shells.

V. Economic Uses of Refuges: None

VI. Field Investigation or Applied Research.

A. No research work.

B. Bird Banding. None.

VII. Other Items.

A. Photographs.

Signed:

Wesley D. Parker.
Refuge Manager.

Very truly yours,

Nelson B. Nelson
Laborer- Patrolman, Lake Ardoch Refuge.



Kellys Slough, October 4th, 1940; Shows the spillway and part of the dam. The water is at this level most of the time as it is spring fed. *P. vaginatus* can be see along the dam beyond the spillway.



Lake Ardoch, September 29th, 1940; Taken from south side near the dam. Shows beds of *P. vaginatus* which were quite general over the lake.



Lake Ardoch, September 29th, 1940; Taken from observation tower. Shows some of the twenty thousand Franklin Gulls resting on the lake. Some rafts of gulls can be seen at the upper end of the lake.



Lake Ardoch, October 26th, 1940; In this bay hardstem bulrush clumps were planted by the WPA crew. The control gates can be seen in the upper-right hand side.

at the upper end of the lake.
 leading on the lake. some birds of Gulls can be seen
 some. from some of the twenty thousand Herring Gulls
 Lake Victoria, September 23rd, 1940: Taken from observation



ROUTING SLIP

DIVISION OF WILDLIFE REFUGES

DATE: 8-16 1940☒ MR. SALYER☒ ~~MRS. WOODEN~~☒ ~~MR. BEMER~~☐ MRS. GARVIN☒ ~~MR. DUMONT~~☒ SECTION OF OPERATIONS:☒ ~~Mr. Bell~~☒ ~~Mr. Hennes~~

Mrs. Watkins

Mrs. Kricun

☒ SECTION OF LAND MANAGEMENT:☒ ~~Mr. Barnshaw~~☒ ~~Mr. Ackerknecht~~☒ SECTION OF STRUCTURES:☒ ~~Mr. Taylor~~☒ ~~Mr. Gustafson~~☒ SECTION OF HABITAT IMPROVEMENT:~~Mr. Kubichek~~~~Mr. Smith~~~~Mr. Griffith~~

Miss Cook

☒ SECTION OF ERA:

Mr. Regan

☒ Dr. Bourn

Mrs. Fishman

☒ STENOGRAPHERS:☒ Miss Price☒ Miss Whorley

REMARKS:

North Dakota Easement Refuges Dist # 2
Quarterly Report May-July 1940Return to: J. Cook

IN REPLY REFER TO

UNITED STATES
DEPARTMENT OF THE INTERIOR

~~BUREAU OF BIOLOGICAL SURVEY~~

FISH AND WILDLIFE SERVICE
500 National Building
Minneapolis, Minnesota

August 14, 1940

Director, Fish and Wildlife Service

Washington, D. C.

Dear Sir:

There is enclosed quarterly narrative report for
Easement Refuges in District #2, North Dakota, submitted
by Mr. Nelius B. Nelson, Laborer-patrolman, Lake Ardoch
Refuge.

Very truly yours,



F. C. Gillett
Refuge Inspector

Enc.





Respectfully,
B. C. Gillette

Very truly yours,

Sincerely,

Mr. Nathan B. Nelson, Director-Bureau of Game and
Wildlife, Department of the Interior, Washington, D. C.
There is enclosed herewith a letterhead memorandum
dated July 14, 1940.

Washington, D. C.

Director, Bureau of Wildlife Service

August 14, 1940

Mr. Nathan B. Nelson
200 Maryland Building
Fish and Wildlife Service

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DEPARTMENT OF THE INTERIOR
UNITED STATES

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF BIOLOGICAL SURVEY

FISH AND WILDLIFE SERVICE
500 National Building
Minneapolis, Minnesota

August 14, 1940

Director, Fish and Wildlife Service

Washington, D. C.

Dear Sir:

There is enclosed quarterly narrative report for
Easement Refuges in District #2, North Dakota, submitted
by Mr. Melius B. Nelson, Laborer-patrolman, Lake Ardooh
Refuge.

Very truly yours,

F. C. Gillett
Refuge Inspector

Enc.



UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF BIOLOGICAL SURVEY

FISH AND WILDLIFE SERVICE
800 National Building
Minneapolis, Minnesota

August 14, 1940

Director, Fish and Wildlife Service

Washington, D. C.

Dear Sir:

There is enclosed quarterly narrative report for
Basement Refuges in District 42, North Dakota, submitted
by Mr. William B. Nelson, Laborer-Patrolman, Lake Ardoch

Refuge.

Very truly yours,

F. C. Gillett
Refuge Inspector

Enc.



NARRATIVE REPORT
MIGRATORY WATERFOWL EASEMENT REFUGES
DISTRICT #2 NORTH DAKOTA

By: Nelius B. Nelson, Laborer-Patrolman
Lake Ardoch Refuge, Ardoch, N. Dak.

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NARRATIVE REPORT

I. General

A. Weather Conditions: Lake Ardoch Refuge

Rainfall

May.....	.86
June.....	.51
July.....	4.14
Total.....	5.51

B. Water Conditions: Due to the small amount of rainfall during this period up until the middle of July many of the water areas on the refuges in this district became very low or dry. However, during the last two weeks in July most of the district received from two to four inches of rain. During the middle of July the water level on Lake Ardoch dropped to 14 inches below spillway level. The rains brought it back up to $10\frac{1}{4}$ " below spillway level. The lake on May 4th had a pH of 7.47, on June 7th, a pH of 8.50 and on July 30th a pH of 7.6, which would indicate the lake is slightly ^{alkaline} ~~acid~~ instead of ^{acid} ~~alkaline~~. The following water analyses were taken:

Sample No. 3 - Lake Ardoch; sample taken on May 4, 1940; twelve quarts of lake water was gathered and placed in an enameled pail from which this sample was obtained after mixing. The samples were taken from the south end of the lake; west side straight across from the cabin; several places along the west side north as far as the point; several places in the middle of the lake; and a few along the northwest side of the lake just north of the control gates.

Sample No. 4 - Lake Ardoch; sample taken on June 7, 1940; from near the control gates.

All results are reported in parts per million as calcium carbonate.

	<u>Sample Number</u>	
	<u>3</u>	<u>4</u>
pH.....	7.47	8.50
Total solids.....	2,800 p.p.m.	3,700 p.p.m.
Dissolved solids.....	2,700 p.p.m.	3,700 p.p.m.
Total hardness..... (soda reagent)	316 p.p.m.	548 p.p.m.
Alkalinity.....	122 p.p.m.	136 p.p.m.
Carbonate hardness....	122 p.p.m.	136 p.p.m.
Non-carbonate hardness	194 p.p.m.	412 p.p.m.

Kellys Slough, Little Goose, Pioneer Lake, and Wood Lake Marsh Refuges were near spillway elevation most of the period, while Silver Lake, Lac Aux Mortes, Buffalo Lake, Johnson Lake, Sibley Lake, Prairie Lake, Lambs Lake, Billings Lake, and Pleasant Lake were either dry or nearly dry.

II. Wildlife

A. Waterbirds:

1. Population and behavior

a. Species. Canvas-back - a brood of ten were seen in the south end of Lake Ardoch on July 25th. This is the only canvas-back brood and adult female observed on this area since migration.

Whistling Swan - One was seen on Lake Ardoch during the last week in July. It appeared to be slightly wounded in the wing.

Redheads - Three broods have been seen on Lake Ardoch.

b. Groups. In comparison with 1939 nesting season, there were about 20% less ducks nesting on Lake Ardoch; the

only apparent reason for this was that, throughout the vicinity there were many potholes filled with water which attracted several of the species. With the abundance of water, cover, and food, five thousand ducks should have nested on this lake. Approximately 1800 pairs of ducks nested on the refuges in district #2.

2. Food and cover. On the Lake Ardoch Refuge the most common covers are Prairie Bulrush and Cord grasses; Hardstem Bulrush is very rare. Beds of Potamogeton vaginatus are common over most of Lake Ardoch and P. pectinatus is common on the Forest River where it enters the lake. Insect life is very abundant; tests in the latter part of July reveal that per one fourth square foot of mud from 20 to 225 midge larvae can be found (adult midges were very abundant in July). Water fleas are the most abundant. Other common aquatic insects were caddisfly larvae and water mites. There were no indications of any crustaceans.

seed scheduled
for fall planting
WES

The food and cover on all the other refuges in this district, where there was any water, was fair. Kellys Slough, Wood Lake Marsh, Rose Lake, and Pioneer had an abundance of food and cover.

3. Disease. No dead or sick birds were seen on any of the refuges.

B. Upland-game Birds.

1. Population and behavior. Hungarian Partridge were the most common of the upland game birds. It is estimated

that there are between 500 and 700 partridge on the refuges in this district. There are about 300 to 500 pheasants on these refuges. The Pinnated grouse is more common than the Sharptail.

2. There was no upland game stocking on any of the refuges in this district.

C. Big-game animals - none.

D. Fur-bearing animals, Predators, Rodents and other animals.

1. Population and behavior. On the Lake Ardoch Refuge there are between 75 and 150 Muskrat and not over twenty mink. There was no indication of any predation on waterfowl or of any damage being done to islands and dam. On Kellys Slough no Muskrats and mink were seen but there were indications of several Muskrats and a few mink. On Pioneer Lake the Muskrats have numerous burrows along the banks but no burrows were noticed along the dam. There are between 25 and sixty rats on this area.

2. Control. No predatory animals were taken off the refuges during this period.

E. Fish. On the Lake Ardoch Refuge there were numerous five-spined sticklebacks, small minnows, and a few bullheads. No game fish were seen. On Kellys Slough sticklebacks were common.

III. Refuge Development and Maintenance.

A. Physical Development.

1. Lake Ardoch Refuge. WPA hauled with two bureau trucks One hundred and thirty seven loads (2 to 3 ton) of rocks for riprapping on the dam. One hundred and forty-eight

cubic yards of gravel was hauled for filling in on the riprap. The control gates were painted with asphalt where necessary; cattle guard was repaired; one coat of paint was applied on all the refuge buildings; flag pole was trimmed and treated; several loads of top soil was hauled in on the lawn about the cabin. From 6 to 14 men were assigned to the Lake Ardoch Refuge. Two NYA boys were employed, assisting with tree, shrub, and aquatic planting; cutting weeds and hoeing trees; and assisted with the posting of refuge signs.

2. Kellys Slough. WPA put all government fence in order. Put up wood corner posts where the iron posts were not satisfactory because of marsh land.

B. Plantings. ✓

1. Aquatic and Marsh plants.

- a. Lake Ardoch

100 lbs. ✓ - *Echinochloa crusgalli* - N. end & islands W. side.
Planted in May.

- b. Little Goose

25 lbs. ✓ - *P. pectinatus* - East side along shore - May

100 lbs. ✓ - *E. crusgalli* - East side along shore - May

150 lbs. ✓ - *S. paludosus* - East side towards North end.
Planted in May.

- c. Pioneer Lake

100 lbs. ✓ - *E. crusgalli* - West side - May

75 lbs. ✓ - *S. paludosus* - West & East side towards S. end.
Planted in May.

- d. Wood Lake Marsh

50 lbs. ✓ - *E. crusgalli* - Around north pond - June

e. Rose Lake

100 lbs. - E. crusgalli - West side - June

75 lbs. - S. paludosus - West side - June

2. No cultivated crops on refuges in this district.

3. Trees and Shrubs

a. Lake Ardoch

50 green ash	100 Missouri Cottonwood
125 Russian Olive	50 Caragana
25 American Elm	

All these trees were planted in the cabin yard. The dry weather during May and June caused some of them to die but a 90% survival is expected.

4. Grasses. None planted; no big game animals.

C. Collections.

1. Plant Material. None collected.

2. Specimens. No bird or animals skins collected.

D. Distribution of Seed and Nursery Stock.

1. None distributed.

IV. Public Relations.

A. Recreational Uses.

1. There are no public picnic grounds on any of the refuges in this district. However, on the Lake Ardoch Refuge about fifty people had picnics in the timber along the entrance road to the cabin. There have been a few in swimming at the Little Goose Refuge. A few people have used small boats on Lake Ardoch.

2. No fishing on any of the refuges.

3. Hunting. None.

4. Number of visitors (official & general public).

a. Mr. Salyer and Mr. Taylor spent about one hour on the Lake Ardoch Refuge. They also visited the ~~Mc~~ Aux Mortes Refuge.

Mr. O. A. Stevens, Botanist, and Mr. H. S. Telford, assistant Entomologist, both from the A. C. at Fargo spent one full day on the Lake Ardoch Refuge.

B. Violations. None.

V. Economic Uses of Refuge.

A. Grazing - None.

B. Haying - None.

C. Timber Removal - None.

D. Cooperative farming - None.

E. Fur Harvest - None.

F. Commercial Fishing - None.

VI. Field Investigation or Applied Research.

A. No research work.

B. Bird banding. None.

VII. Other Items.

A. Photographs.

Signed:

Wesley D. Parker
Refuge Manager

Very truly yours,

Nelson B. Nelson
Laborer-Patrolman, Lake Ardoch Refuge.



Lake Ardoch, June 18, 1940; shows gravel piles that have been hauled by the WPA; it will be used to fill on the riprap. Control gates and bridge are on the extreme left.



Lake Ardoch, June 18, 1940; Shows riprap done by the WPA crew and gravel that has been filled in on the riprap on the dam.



Lake Ardoch, June 16, 1940; Headquarter buildings at the Lake Ardoch Refuge.



Kellys Slough, June 18, 1940; Corner post construction on government owned land done by the WPA crew,